1 NEW YORK CITY TEACHERS' RETIREMENT SYSTEM INVESTMENT MEETING 2 Held on Monday, April 9, 2018 at 55 Water Street 3 New York, New York 4 5 ATTENDEES: б JOHN ADLER, Chairperson, Trustee, Mayor's Office 7 DEBRA PENNY, Trustee, TRS THOMAS BROWN, Trustee, TRS 8 DAVID KAZANSKY, Trustee, TRS SUSANNAH VICKERS, Trustee, Comptroller's Office JOHN DORSA, Trustee, Comptroller's Office 9 PATRICIA REILLY, Executive Director, TRS 10 ANTONIO RODRIGUEZ, Finance VALERIE BUDZIK, TRS 11 THADDEUS MCTIGUE, TRS LIZ SANCHEZ, TRS 12 SUSAN STANG, TRS CYNTHIA COLLINS, Mayor's Office 13 DAVID LEVINE, Groome Law Group SAM RUMLEY, Chief Actuary 14 ROBIN PELLISH, Rocaton MICHAEL FULVIO, Rocaton RONALD SWINGLE, TRS 15 ROBERT RAUCCI, TRS FRANK BARBARINO, Comptroller's Office 16 JOHN MERSEBURG, Comptroller's Office 17 MELVIN AARONSON 18 19 20 21 22 23 24 25

1 PROCEEDINGS 2 (Time noted: 10:11 a.m.) 3 4 CHAIRPERSON ADLER: Good morning, 5 everyone. Welcome to the Teachers' Retirement б 7 System City of the New York Investment Meeting 8 for April 9, 2018. 9 Welcome back from vacation, those of us 10 who have been on vacation. And we will proceed. 11 Patricia, please call the roll. MS. REILLY: John Adler? 12 13 CHAIRPERSON ADLER: I am here. 14 MS. REILLY: Thomas Brown? MR. BROWN: Here. 15 16 MS. REILLY: David Kazansky? 17 MR. KAZANSKY: Present. MS. REILLY: Debra Penny? 18 MS. PENNY: Here. 19 20 MS. REILLY: Raymond Orlando? 21 (No response.) 22 Susannah Vickers? 23 MS. VICKERS: Here. 24 MS. REILLY: We have a quorum. 25 CHAIRPERSON ADLER: Excellent.

With that, we'll turn it over to Rocaton
 to go through our performance report.
 MR. FULVIO: Good morning, everyone.
 We'll begin with the performance of the

5 Passport Funds through February 28, 2018.
6 Everyone should have that report in front of
7 them.

8 At the end of February the diversified 9 equity fund had assets of \$15.8 billion. During 10 the month you'll recall volatility returned to 11 equity markets, particularly in the U.S. as well 12 as in markets abroad.

13 The fund as a whole was down about 3.8 14 percent. That's slightly behind the broad U.S. 15 equity market, which was down about 3.7 percent. 16 That brought the year to date return for the fund 17 to positive 1 percent. And the broad U.S. equity 18 market during that time period, at the end of 19 February, remained up about 1.25 percent.

20 Really what was driving performance in 21 February was, you recall, the volatility, which 22 not only impacted the U.S., but also non-U.S. 23 developed and emerging markets.

24 The international equity composite as a 25 whole was down 4.4 percent, and that was roughly

1 in line with the broad international composite 2 index that you use, which again includes the 3 developed and emerging markets. 4 Developed markets were down a little bit more than emerging markets. Emerging markets 5 were down 4 percent, and developed markets were б down 4.5 percent. 7 Year to date, I mentioned the fund was up 8 about 1 percent; and in non-U.S. plans, developed 9 10 and emerging those markets were only up about 11 half a percent during that time period. 12 We've seen further volatility through March, and we'll talk further about that. But at 13 the end of February it was still up about 1 14 15 percent year to date. The balanced fund, you will recall which 16 17 went live at the beginning, January 1, had assets of about \$387 million. In the month of February 18 that fund was down about  $1 \ 1/2$  percent; and year 19 20 to date had a modest negative return of about negative 30 basis points. 21 22 The international equity fund, I 23 mentioned earlier, doing a little underperforming in the U.S. That fund was down 4.4 percent. 24 The inflation protection fund in the month of 25

1 February was down 1.7 percent. Year to date that 2 fund is down  $1 \frac{1}{2}$ . The socially responsive equity fund, 3 4 about \$192 million in assets, that fund was down about 3 percent in February, protecting a little 5 on the downside. Year to date that fund for 6 February was up about 2.3 percent, about 50 basis 7 8 points relative outperformance versus the S&P. 9 Any questions on performance through 10 February? I will comment a little broadly on March 11 12 performance. I mentioned, continued volatility, which everyone is aware of, given the headline 13 grabbing. The U.S. equity market was down about 14 15 2 percent in the month of March, bringing the 16 calendar year to date down to negative 60 basis 17 points. 18 In non U.S. and developed markets, particularly in large cap markets, it was down 19 20 negative 1.7 percent. 21 The emerging equity markets were down 1.1 percent, so a little bit of relative 22 23 outperformance by emerging markets. But all in 24 all, negative markets across the board. The underlying strategy for the inflation 25

1 protection fund during March added about 80 basis 2 points. The calendar year to date return through 3 the first quarter was still negative to the tune of about 80 basis points. And the underlying 4 5 strategy for the socially responsive equity fund continued to protect so far this year, down about б 7 1.7 percent versus the S&P, which was down about 8 2.5 percent. 9 Actually, that fund is ahead year to date in relative and absolute returns, so an outlier 10 11 in that regard. 12 Any questions on February or March? 13 (No response.) We had another topic for the public 14 15 session as it pertains to emerging market country 16 screens, something that the Board had asked 17 Rocaton to spend some time thinking about, revisiting the approach this board has taken in 18 the past. So I'll turn it over to Robin to walk 19 20 everyone through that. MS. PELLISH: There is a deck that was 21 22 sent out in advance -- the emerging country 23 screens process. The impetus for this discussion is the 24 fact that the country screening process currently 25

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used in the fund for public market investments in emerging market equities. It was put into place in 2010. And so, the Board felt that this was an appropriate time to look back at the process that was used at that point in time, and to review it for continued appropriateness. And so that is what the discussion is focused on.

8 This is not intended to be a complete 9 discussion of this process, but rather an 10 introduction to remind everyone what we do today 11 and how we might do things differently if the 12 Board feels comfortable; and what alternatives we 13 might consider.

14 So, if we turn to page 3, in this deck I 15 want to highlight a number of comments that are 16 made here.

So, the model, we have a screen shot of 17 that on page 18, Exhibit 1, is a pretty elaborate 18 model that was, as already said, established in 19 20 2010. And the objective of that model is to be very thoughtful and to take into account a number 21 of criteria that the Board felt were important in 22 23 evaluating the appropriateness of individual 24 emerging market countries for investment in the Teachers' portfolios. 25

1 And so it was a very elaborate process by 2 which various criteria were considered, some of which were not retained in the final version of 3 4 the model. There were weights applied. There was a lot of work that was done in order to come 5 up with the process that resulted in the б screening out from all public emerging market 7 portfolios of Chinese equities, Russian equities, 8 9 and Pakistani equities. 10 Although it was a very thoughtful and rigorous process, there are a couple of issues we 11 12 highlight on page 3; including the fact that the individual rankings of the weights associated 13 with the criteria were by definition somewhat 14 15 subjective. They were, again not randomly assigned, and it was a pretty thorough discussion 16 17 of how important each criteria was. But, by definition, it's somewhat subjective. 18 The process doesn't include -- although 19 20 it's certainly part of the discussion -- it includes an explicit discussion of the 21 22 opportunity cost of excluding entire markets. 23 And finally, the current approach doesn't 24 really identify how and when the analysis would be revisited. We are doing that today. 25

1 And we note at the bottom of page 3 that 2 probably the most important consideration is that 3 the country valuation process that we use today 4 is oriented toward eliminating an entire market, 5 rather considering engagement with individual companies. And that's something that the Board 6 has discussed in a fairly significant way. 7 8 And so, we want to take a look at this process to see whether it might address some of 9 10 these issues then we find on page 3. 11 If we take a look back, a step back, and 12 look at emerging markets on page 4. What we see on page 4 is a snapshot. And this snapshot is as 13 of the middle of last year. But it hasn't 14 changed significantly. And we thought it was an 15 16 interesting way to portray the global equity 17 markets. On the left-hand side of the page you 18 will see a grid, and in this grid each box 19 20 represents about \$100 billion in equity market 21 capitalization. So you can see that China on this box 22 23 represents -- it may not be obvious -- but 24 represents the single largest, second largest equity market after the United States. And in 25

aggregate, the Chinese equity market is about the
 same size as the entire euro zone. So it is a
 very significant equity market, and currently we
 do not invest in it.

And that fact is further described on 5 page 5. What we've looked at on page 4 is the б current state of market capitalization. And page 7 8 5, what we do is compare the state of affairs at 9 the end of 2010 when this process was first put 10 in place, and we compare it to the year end 2017. And what you can see if we look on the 11 12 right-hand side of the table, China has in fact become one of the world's largest economies, and 13 14 continues to grow as a portion of global equity 15 markets.

And what you can see on page 5 is, the U.S. has grown more significantly than any other market. It's grown at year end 2010 it was 43 percent of global equity markets. At the end of '17 it is 52 percent. So very significant growth. MR. FULVIO: Just on an absolute level,

23 it's doubled in size, U.S. equity.

MS. PELLISH: Right. You can see,because the U.S. equity market has grown so

1 significantly, non-developed has actually shrunk 2 as a percentage of the global equity market, down 3 from 43 to 36 percent. And China, the shares 4 have grown from 2 percent to 3 percent. CHAIRPERSON ADLER: A quick question 5 about that. So, obviously we have a home country б 7 bias in our allocation to global equity markets. But in terms of the overall market, our 8 9 allocation, how has that changed between U.S. and developed and emerging market over that last 10 11 seven years? 12 In other words, what percentage of our equity allocation, has that changed between U.S. 13 14 and developed and emerging markets over this 15 period of time? 16 MS. PELLISH: Yes. It's grown. Non-U.S. 17 has definitely grown. 18 And actually, Mike will pull up the numbers, but I don't think you have a 19 20 particularly significant home country bias right 21 now. MR. FULVIO: It's come down over time. 22 23 At the end of January total equities, public equities were about \$40 billion, of which \$23 24 billion was in the United States. So that bias 25

1 has come down over time.

2 MS. PELLISH: And really don't have much of a home country bias. That was a very 3 4 deliberate decision over the past several years to various asset allocations, to reduce that home 5 country bias. б 7 CHAIRPERSON ADLER: Thanks. MS. PELLISH: If we look into the 8 9 emerging markets more specifically. Emerging markets are still a small percentage of the 10 global opportunity set. It's actually a little 11 smaller today than it was at the end of 2010, 12 13 because of a significant growth in the U.S. equity market. On a relative basis, it's about 14 15 11 percent of the global equity markets. 16 If you look at the makeup of those 17 emerging markets, you see the end of 2010, China 18 was 17 percent, and today it's 28 percent. And we exclude in our public equity portfolios 28 19 20 percent of the world's emerging markets. 21 CHAIRPERSON ADLER: That's A-shares? MS. PELLISH: Yes. 22 23 CHAIRPERSON ADLER: But A-shares are the 24 ones listed in Hong Kong? MR. FULVIO: That's correct. 25

1 CHAIRPERSON ADLER: So it doesn't include 2 A-shares? 3 MR. FULVIO: Not today, because they can 4 be gradually adding A-shares over time. MS. PELLISH: In the index. They're not 5 in the index yet. б CHAIRPERSON ADLER: So we don't invest in 7 8 A-shares? I guess because Hong Kong is now 9 considered part of China. 10 Got it, thank you. MS. PELLISH: So, the point that John was 11 12 referring to, A-shares are going to be gradually added to the benchmark. And so, this, assuming 13 14 that Chinese growth doesn't slow, the percentage 15 of emerging markets that are comprised of Chinese equity is very likely to continue growing. 16 17 So, we've spent some time looking at the growth of the Chinese equity market as a 18 19 percentage of emerging markets since 2010. 20 There've been other changes as well that I think 21 are relevant to our discussion about this 22 process. 23 We list some of them on page 6. So, there's been a significant effort to 24 include the transparency of financial reporting, 25

1 by companies in the emerging markets, and 2 progress has been made. There is still a lot of progress to be made. And one of the 3 4 recommendations we're going to make at the end of 5 this is to have some experts come in and talk to the Board about these kinds of issues. 6 Because this was the concern in 2010. If 7 8 our managers can't get accurate and transparent reporting, then we have reservations about 9 10 allowing them to invest in those companies. 11 But if the reporting has improved, which 12 we think it has, I think that's an important factor for the Board to consider as it thinks 13 14 about this process. We noted before the relative weights of 15 16 countries within the emerging markets have changed significantly. Globalization has further 17 18 eroded the boundaries between what is an emerging market company and what is a developed market 19 20 company. Companies source themselves on a global 21 basis, particularly larger companies. 22 And so, drawing a bright line between 23 emerging market companies and developed companies 24 is increasingly difficult. And then, finally, we note here that 25

Rocaton and many other asset manager consultants
 look at emerging markets return opportunities as
 being fairly significantly greater than that of
 developed market equities.

Develop market equities -- certainly 5 since 2010 have outperformed emerging markets. б And we think on a relative valuation basis --7 this is not a tactical recommendation, but it is 8 supported by the fact that our return 9 10 expectations for emerging market countries in 11 general are higher than for developed markets 12 equity.

13 So that I think is supportive of this 14 recommendation, that we look at a process which 15 serves to focus on companies that should be 16 excluded potentially rather than countries.

17 So, on page 7 we start talking about a potential alternative approach. Most 18 importantly, we note on page 7 that any 19 20 alternative approach which might be considered 21 and potentially adopted should continue to be 22 aligned with the Board's principles and values. 23 So this is an exercise in fiduciary responsibility. And the original process was a 24 fiduciary exercise to make sure that issues and 25

risks that troubled the Board about certain
 emerging markets were reflected in the guidelines
 for our emerging market managers.

We are not recommending any change in that posture. Any change to the process would have still to take into account the issues, priorities and concerns of the Board, and would be reflected in guidelines given to emerging market managers.

However, we think that we could do so However, we think that we could do so even with a modified process. And we highlight in the middle of page 7 one approach that might be used in place of the current country screens.

First, we say that might start with an emerging market statement of beliefs, concerns and priorities; so that any new process would be clearly shaped by the Board's investment beliefs regarding emerging markets; and that we would communicate the statement to all of your emerging market managers.

And importantly, we would use a third party advisor to evaluate portfolio holdings periodically, to confirm that the portfolios being held are generally consistent with the statements and guidelines, and would identify any

1 outliers for engagement and possible divestment. 2 So again, it's a process that we have in place, applies the Board's priorities and 3 4 concerns and your view of risks in one way. 5 We're suggesting that these priorities and concerns might be applied in a different way б which might allow for a more extensive use of the 7 8 opportunity set offered in emerging markets. 9 We note here the potential benefit of 10 this change. Again, it includes increasing the 11 opportunity set, and also creating opportunities 12 to foster change to engage with emerging market 13 companies. 14 BAM has been very successful in its 15 engagement with developed market companies. And 16 we think that this process might be able to be 17 extended to the large emerging markets companies. We note here that there are issues that 18 should be considered, potential issues. One is 19 20 that embarrassment factor. So this would 21 increase the opportunity set but also increase 22 the number of companies that you might hold. And 23 we want to be cognizant of this issue of 24 potential embarrassment.

25 And it also is a policy that would

require greater oversight by the Board, by staff, by outside advisors. We dealt with the issue of the Chinese companies by not owning them. If we broaden the opportunity set for your active managers, we have to take steps to make sure we're monitoring those portfolios, establishing appropriate guidelines.

8 So what we are suggesting is that we 9 bring in some subject matter experts to meet with 10 the Board, to provide some information so that 11 you can evaluate whether you think this 12 alternative approach is pragmatic and eventful.

And we'd like them to talk about things 13 14 like improved reporting transparency for emerging 15 market companies; talk about how engagement might actually be carried out; and potential bringing 16 17 in one or two of your existing active managers to talk about their process and how your priorities 18 might be incorporated into that process if you 19 20 allow them to expand the opportunity set to 21 include China.

22 So I will stop now and see if you have 23 questions or comments?

MS. VICKERS: Robin, I like your lastbullet reminding us to discuss private market

investments; because we have a different policy
 governing private markets, and this goes through
 this process. I definitely support looking at
 this through the lens of private as well as
 public.

6 CHAIRPERSON ADLER: Other comments or 7 questions?

8 I will weigh in a little bit. I think 9 this is a great idea and I think the process you 10 lay out is very good. A couple of things.

I I think folks know that NYCERS also has an emerging markets policy. Susannah and I sit on that board, the Comptroller and Mayor sit on that board as well.

Just a couple things about this. One is that the screen shot from 2010, it looks quite different today, because NYCERS has continually updated the model that they use for scoring.

So, in fact, the issue of capital market openness, as Robin alluded to, has really improved all over the world. So that has been eliminated as a separate criteria.

And there are some other changes as well.
And it evolves. The scoring doesn't stay static
every year. In fact, NYCERS did a recent, I

1 think two years ago, RFP for its emerging markets
2 consultant.

And, in fact, they used the same general 3 4 consultant, Callan, but a separate RFP. And Callan uses Verite, the firm that Robin referred 5 to, to provide data, especially on the labor б 7 scoring. And then they use other sources of data for scoring the other markets. 8 9 MS. PELLISH: MSCI. 10 CHAIRPERSON ADLER: They use MSCI, the use Freedom House for some stuff. I can't 11 remember what other sources. 12 13 MS. VICKERS: I did want to bring up, we had a discussion about the applicability and the 14 15 freshness of the data, which is also something we 16 should all bear in mind. Yes, they have these models that have different sources. But some of 17 our discussion at the other boards sort of 18 19 centered around dynamics and changing situations, 20 political situations and other situations in certain countries, and whether or not the data 21 22 feeds that are being used to do this analysis, 23 really how timely they are. And that's something to consider, because

And that's something to consider, becausethere's a lot of lag time built into this.

1 So, thinking about what our goal might be 2 to capture an accurate picture of the current situation in certain countries, is this data the 3 4 best we can get? Or is it as applicable to --CHAIRPERSON ADLER: I think the key point 5 Robin is making, is this is a country based б 7 screen. And I think what Robin is saying, that 8 we want to consider evolving to a company basis screen; because there can be countries where 9 10 there are certain companies that might be deemed 11 worthy of investment. In Russia, China, 12 Pakistan, which includes companies at this point, that might be companies there we actually think 13 14 are doing a good job. And contrary wise -- here is the 15 16 interesting thing about China in particular, 17 which is that, the definition here is what exchange the shares are trading on; right? 18 Whereas, we know plenty of U.S. based companies 19 20 that have a tremendous amount of exposure to China. 21 Apple, Nike, a bunch of these countries 22 23 that are sort of very large market cap companies that trade in the U.S., actually have a huge 24 amount of their operations in China. 25

1 If we're concerned about reputational 2 risk and labor rights in particular, we've all heard about Foxconn in China, where it wasn't a 3 4 paragon of labor rights and they were manufacturing items for Apple and other 5 U.S.-based companies. б So it's complex, and I like the idea of 7 8 delving into that. 9 I'm not sure that we're going to get to a 10 place where we feel comfortable with it. But I 11 absolutely think we should engage in the process 12 and see where we can land. Personally, I think it's a really good idea. 13 14 Anybody else? I'd be interested -- I think Mel was the 15 16 only person in the room who was a Trustee. MR. DORSA: I was not a Trustee, but I 17 worked on this from the BAM side. 18 CHAIRPERSON ADLER: Mel, any perspective 19 20 on this from someone who was there at the 21 inception of this policy? MR. AARONSON: I think it's great to be 22 23 examined, the position we had before. And that's 24 what we're doing, and come up with something better for the retirement systems. We don't have 25

1 to win by what we did in the past.

2 CHAIRPERSON ADLER: The other thing I would throw out there is that, if we did decide 3 4 to use a third party advisor, it might be 5 something that we might want to consider doing with one of the other boards for economy of б scale. We spend quite a bit of money at NYCERS 7 on Verite and Callan to do this service, and it 8 9 might be something worth exploring if we get 10 there. Just something to keep in mind. MS. PELLISH: We will take the first 11 12 step, the next step identified here, and bring in folks to shed light on some of these important --13 14 MR. KAZANSKY: Thank you so much for 15 doing this. This is going to be very helpful 16 going forward. CHAIRPERSON ADLER: I think that is the 17 conclusion of our public agenda for today. We do 18 have executive session scheduled. 19 20 So, can we have a motion to exit public session and enter executive session? 21 22 MS. PENNY: I move, pursuant to Public 23 Officers Law Section 105 to go into executive 24 session for discussions on specific investment 25 matters.

1	CHAIRPERSON ADLER: Thank you.
2	Is there a second?
3	MS. VICKERS: Second.
4	CHAIRPERSON ADLER: Discussion?
5	All in favor of the motion please say
6	"Aye."
7	(A chorus of "Ayes.")
8	All opposed please say "Nay."
9	Any abstentions?
10	(No response.)
11	Motion carries.
12	(Whereupon, the Board entered executive session.)
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1	CHAIRPERSON ADLER: Anything else for
2	executive session?
3	(No response.)
4	I think we want to go back into public
5	session so we can report out.
б	Is there a motion to exit executive
7	session and return to public?
8	MR. BROWN: So moved.
9	CHAIRPERSON ADLER: Is there a second?
10	MS. VICKERS: Second.
11	CHAIRPERSON ADLER: Discussion?
12	(No response.)
13	All in favor of the motion to exit
14	executive session and return to public session,
15	please say "Aye."
16	(A chorus of "Ayes.")
17	All opposed say "Nay."
18	Any abstentions?
19	Motion carries.
20	(Whereupon, the Board returned to public
21	session. )
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1 CHAIRPERSON ADLER: We're back in public 2 session. 3 Susan, would you report out of executive 4 session? MS. STANG: In executive session a 5 presentation from a service provider was received б and discussed. 7 8 A manager update was presented. 9 A quarterly report on a partnership was 10 presented. The result of an RFP for an investment 11 strategy was received and discussed. Consensus 12 13 was reached on adding managers to a pool for 14 potential use. The managers are listed on page 15 24 -- page 135 in BAM's memo. A presentation on a private equity 16 investment was received and discussed. Consensus 17 was reached. 18 CHAIRPERSON ADLER: Thank you very much. 19 20 Anything further for public session? 21 (No response.) A motion to adjourn would be in order. 22 23 MR. KAZANSKY: So moved. CHAIRPERSON ADLER: Is there a second? 24 MS. VICKERS: Second. 25

1	CHAIRPERSON ADLER: Any discussion?
2	(No response.)
3	All in favor of the motion to adjourn
4	please say "Aye."
5	(A chorus of "Ayes.")
6	All opposed please say "Nay."
7	Any abstentions?
8	(No response.)
9	We are adjourned.
10	(Time noted: 12:44 p.m.)
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CERTIFICATION I, Jeffrey Shapiro, a Shorthand Reporter and Notary Public, within and for the State of New York, do hereby certify that I reported the proceedings in the within-entitled matter, on Monday, April 9, 2018, at the offices of the NEW YORK CITY TEACHERS RETIREMENT SYSTEM, 55 Water Street, New York, New York, and that this is an accurate transcription of these proceedings. IN WITNESS WHEREOF, I have hereunto set my hand this 12th day of April, 2018. JEFFREY SHAPIRO